

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): A power converter comprising:
a transformer having a primary winding and a secondary winding; and
a plurality of switches coupled to said primary and secondary winding, said plurality of switches responsive to at least one control signal to short both said primary and secondary winding during a first reset time interval, said plurality of switches includes a first pair of switches coupled in series to one end of said secondary winding configured to be simultaneously controlled using a first control signal and a second pair of switches coupled in series to an opposite end of said secondary winding configured to be simultaneously controlled using a second control signal, ~~wherein the first pair of switches is coupled in series to one end of said secondary winding and the second pair of switches is coupled in series to an opposite end of said secondary winding; and~~
a controller configured to provide a first and a second control signal to said first and said second pairs of switches, respectively, wherein said first control signal simultaneously controls said first pair of switches and said second control signal simultaneously controls said second pair of switches over an entire cycle of said power converter.
2. (Original): The power converter of claim 1, wherein said plurality of switches comprises:
a first high side switch and a first low side switch coupled in series along a first path of a full bridge circuit, a first node between said first high side switch and said first low side switch;
and

a second high side switch and a second low side switch coupled in series along a second path of said full bridge circuit, a second node between said second high side switch and said second low side switch, wherein said primary winding is coupled between said first node and said second node, and wherein said first and second high side switches are adapted to open and said first and second low side switches are adapted to close during said first reset time interval to short said primary winding.

3. (Original): The power converter of claim 2, wherein said plurality of switches further comprises:

a first rectifier switch coupled to one end of said secondary winding; and

a second rectifier switch coupled to an opposite end of said secondary winding, wherein said first and second rectifier switches are adapted to close during said first reset time interval to short said secondary winding.

4. (Original): The power converter of claim 3, wherein said first low side switch of said first path of said full bridge circuit and said first rectifier switch are responsive to a first control signal and said second low side switch of said second path of said full bridge circuit and said second rectifier switch are responsive to a second control signal.

5. (Original): The power converter of claim 4, wherein said first high side switch of said first path of said full bridge circuit is responsive to a third control signal and said second high side switch of said second path of said full bridge circuit is responsive to a fourth control signal.

6. (Currently Amended): An electronic device comprising:

a power converter to accept an input power signal and provide an output power signal, said power converter comprising:

a transformer having a primary winding and a secondary winding; and

a plurality of switches coupled to said primary and secondary winding, said plurality of switches responsive to at least one control signal to short both said primary and secondary winding during a first reset time interval, said plurality of switches includes a first pair of

~~switches coupled in series to one end of said secondary winding configured to be simultaneously controlled using a first control signal and a second pair of switches coupled in series to an opposite end of said secondary winding configured to be simultaneously controlled using a second control signal, wherein the first pair of switches is coupled in series to one end of said secondary winding and the second pair of switches is coupled in series to an opposite end of said secondary winding; and~~

a controller configured to provide a first and a second control signal to said first and said second pairs of switches, respectively, wherein said first control signal simultaneously controls said first pair of switches and said second control signal simultaneously controls said second pair of switches over an entire cycle of said power converter.

7. (Original): The electronic device of claim 6, wherein said plurality of switches comprises:

a first high side switch and a first low side switch coupled in series along a first path of a full bridge circuit, a first node between said first high side switch and said first low side switch; and

a second high side switch and a second low side switch coupled in series along a second path of said full bridge circuit, a second node between said second high side switch and said second low side switch, wherein said primary winding is coupled between said first node and said second node, and wherein said first and second high side switches are adapted to open and said first and second low side switches are adapted to close during said first reset time interval to short said primary winding.

8. (Original): The electronic device of claim 7, wherein said plurality of switches further comprises:

a first rectifier switch coupled to one end of said secondary winding; and

a second rectifier switch coupled to an opposite end of said secondary winding, wherein said first and second rectifier switches are adapted to close during said first reset time interval to short said secondary winding.

9. (Original): The electronic device of claim 8, wherein said first low side switch of said first path of said full bridge circuit and said first rectifier switch are responsive to a first control signal and said second low side switch of said second path of said full bridge circuit and said second rectifier switch are responsive to a second control signal.

10. (Original): The electronic device of claim 9, wherein said first high side switch of said first path of said full bridge circuit is responsive to a third control signal and said second high side switch of said second path of said full bridge circuit is responsive to a fourth control signal.

11-12. (Cancel)

13. (Currently Amended): A method comprising:

providing a first control signal to control a state of a first high side switch coupled to a first path of a full bridge circuit;

providing a second control signal to control a state of a second high side switch coupled to a second path of said full bridge circuit, said full bridge circuit coupled across a primary winding of a transformer;

providing a third control signal to simultaneously control a state of a first low side switch coupled to said first path of said full bridge circuit and a state of a first rectifier switch of a rectifier circuit over an entire operating cycle, said first rectifier switch coupled to one end of a secondary winding of said transformer; and

providing a fourth control signal to simultaneously control a state of a second low side switch coupled to said second path of said full bridge circuit and a state of a second rectifier switch of said rectifier circuit over said entire operating cycle, said second rectifier switch coupled to an opposite end of said secondary winding of said transformer.

14. (Original): The method of claim 13, further comprising:

shorting said primary winding during a first time interval by closing said first low side switch of said first path of said full bridge circuit and by closing said second low side switch of said second path of said full bridge circuit during said first time interval.

15. (Original): The method of claim 14, further comprising:
shorting said secondary winding during said first time interval by closing said first rectifier switch and by closing said second rectifier switch during said first time interval.

16. (Currently Amended): A power converter comprising:
a full bridge circuit having a first path and a second path, each path comprising a high side and low side bridge switch connected in series, each path having a node between said high side and low side bridge switches, and each path coupled to an input voltage terminal;
a transformer having a primary winding and a secondary winding, said primary winding being coupled between said nodes of said paths of said full bridge circuit; and
a rectifier circuit coupled to said secondary winding, said rectifier circuit comprising a first and second rectifier switch, said first rectifier switch coupled in series to said low side switch of said first path and to one end of said secondary winding, said second rectifier switch coupled in series to said low side switch of said second path and to an opposite end of said secondary winding; and

a controller configured to provide a first and a second control signal, wherein said low side switch of said first path and said first rectifier switch are simultaneously driven by said first control signal and said low side switch of said second path and said second rectifier switch are simultaneously driven by said second control signal over an entire cycle of said power converter.

17. (Original): The power converter of claim 16, wherein high side switches of said first and second paths are adapted to open and said low side switches of said first and second paths are adapted to close during a reset time interval to short said primary winding.

18. (Original): The power converter of claim 17, wherein said first and second rectifier switches are also adapted to close during said first reset time interval to short said secondary winding during said reset time interval.

19. (Currently Amended): A power converter comprising a plurality of DC to DC converters coupled in parallel, at least one of said plurality of DC to DC converters comprising:

a transformer having a primary winding and a secondary winding; and

a plurality of switches coupled to said primary and second winding, said plurality of switches responsive to at least one control signal to short both said primary and secondary winding during a first reset time interval, said plurality of switches includes a first pair of switches coupled in series to one end of said secondary winding configured to be simultaneously controlled using a first control signal and a second pair of switches coupled in series to an opposite end of said secondary winding configured to be simultaneously controlled using a second control signal, wherein the first pair of switches is coupled in series to one end of said secondary winding and the second pair of switches is coupled in series to an opposite end of said secondary winding; and

a controller configured to provide a first and a second control signal to said first and said second pairs of switches, respectively, wherein said first control signal simultaneously controls said first pair of switches and said second control signal simultaneously controls said second pair of switches over an entire cycle of said power converter.

20. (Original): The power converter of claim 19, wherein said plurality of switches comprises:

a first high side switch and a first low side switch coupled in series along a first path of a full bridge circuit, a first node between said first high side switch and said first low side switch; and

a second high side switch and a second low side switch coupled in series along a second path of said full bridge circuit, a second node between said second high side switch and said second low side switch, wherein said primary winding is coupled between said first node and said second node, and wherein said first and second high side switches are adapted to open and

said first and second low side switches are adapted to close during said first reset time interval to short said primary winding.

21. (Original): The power converter of claim 20, wherein said plurality of switches further comprises:

a first rectifier switch coupled to one end of said secondary winding; and

a second rectifier switch coupled to an opposite end of said secondary winding, wherein said first and second rectifier switches are adapted to close during said first reset time interval to short said secondary winding.

22. (Original): The power converter of claim 19, wherein said plurality of switches for each said DC to DC converter are responsive to control signals from a driver associated with each said DC to DC converter.

23. (Original): The power converter of claim 22, wherein said plurality of switches comprise MOSFET transistors and said driver comprises a dual MOSFET driver.